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ABSTRACT

Considerations that affect the type of teaching method employed in undergraduate studies and medical schools are addressed, with attention to the current emphasis on the lecture method and alternative educational experiences that require students to be active, independent learners and problem solvers. Perceived academic priorities and the allocation of professors' time affect the implementation of alternative teaching methods. Methods that foster active and independent but guided learning require enormous amounts of faculty time and energy, especially for pedagogic activities that require personalized attention to small groups of students or to the individual student. Some projections indicate that an average professor spends about 75% of professional time on activities other than teaching, and in the school of medicine this figure would be about 85%. One possible future educational and administrative scenario is that the administration may choose to offer incentives to faculty to introduce methods leading to more active learning on a limited basis. Administrators may also introduce administrative measures and incentives to gradually overcome the traditional faculty resistance to implementing active learning/teaching methods on a large scale. (SW)

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HOW MUCH DO OUR STUDENTS LEARN BY ATTENDING LECTURES?

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HOW MUCH DO OUR STUDENTS LEARN BY ATTENDING LECTURES?

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Presented to the Sixth Annual Conference on Teaching and Learning at the University of Guelph, Guelph, Ontario, Canada, on June 24, 1986.

ABSTRACT:

A lecture, especially a bad one, is one of the worst pedagogic methods. Yet, the majority of our teaching is still represented by magistral lecturing. What should we do about it?

METHODOLOGY OF OUR TEACHING

The answer to the question in the title is simple: not much, considering the time spent by students in the lecture halls. Michael A. Simpson[1] wrote in his monography "Medical Education, A Critical Approach" in 1972: "Fortunately, it appears that medical students are likely to undergo the metamorphosis into passable doctors despite almost anything their teachers do to them". Considering the didactic, magistral lecturing, he notes: "Sir Barcroft used to define a lecture as a process by which information is transferred from the notes of the lecturer to the notes of the student without going through the minds of either". In the author's field, this situation can be even more gravely compounded by the indiscriminate use of otherwise essential audiovisual aids.[2] Once again Michael Simpson: "The ritual exhibition of slides, many of which are totally unintelligible to the audience and some even seem to be unintelligible to the speaker, is all too common".

We, the teachers, have an unfortunate tendency to forget easily

that the process of student learning can be substantially facilitated, unaffected or actively impeded by the pedagogic activities we provide, that is by the educational methodology we choose to execute our teaching. Generally, we have the tendency to talk too much. We like to stay behind our cathedra and talk on and on. We like to talk to our students, but somehow we like less to talk with our students. And what we generally do not like is to listen to our students who want to talk to us, especially on a large and much time consuming scale, since - as we are used to say - we are very busy and have many other things to do. So we talk to the class and some of our students even listen for a while; some of them, inevitably, doze off. We, of course, are convinced that we are providing them with the precious pearls of our wisdom. If they do not listen, tough luck, they are missing a lot. And what this talk about teaching methods is all about?

Dr. E.D. Prentice et al.[3] stated in 1976: "Traditionally, the doctorate rather than familiarity with teaching technology, has been a major criterion for obtaining an academic appointment in the medical sciences. In most cases the stringent requirements of the doctorate almost guarantee that the recipient has had no formal teacher training and little practical classroom experience". Indeed, the current systems of both, academic thought and the consequent administrative measures, are not at all designed, in the average school of medicine, to encourage faculty members to seek actively the achievement of the necessary level of teaching competence. Indeed, because of the present structure, the system discourages them[4]. Who has time to think of and to introduce other educational methods than traditional lectures?

G.P.E.P. REPORT

The Association of American Medical Colleges undertook recently a serious review and re-evaluation of the present state of medical education. The result is a publication, entitled "Report on the General Professional Education of the Physician and College Preparation for Medicine: Physicians for the Twenty-First Century".[5] The Report's principal 27 recommendations, with a number of related ramifications, will have undoubtedly a gradual but deeply penetrating impact on the organization, content formulation and methodology of medical education for a number of decades to come, comparable with the famous Flexner Report[6] of 1910 which shaped the medical education and to a certain extent the medical profession itself for 76 years.

In regard to our topic, magistral lectures, the Report states that the didactic lecturing is presently the predominant method of instruction. It recommends that "Medical faculties should examine critically the number of lecture hours they now schedule and consider major reductions in this passive form of learning. In many schools, lectures could be reduced by one third to one half", and "Medical faculties should offer educational experiences that require students to be active, independent learners and problem solvers, rather than passive recipients of information".

At the author's institution, a number of discussions, proposals and methodological considerations has been brought forward at numerous curricular and instructional development committees and bodies. It is true that in some preclinical sciences the total number of didactic lectures was lowered, but marginally and insignificantly. The students are still required to be in

attendance for about 900 hours in their first academic year alone, and the majority of these hours are spent on didactic whole-class lecturing or on the near-didactic activities in smaller groups. There is, undoubtedly, the resistance on the side of the faculty members as well as - in the author's opinion - on the side of the administration to change the established and traditionally entrenched teaching methods. Theoretical discussions at the committee meetings are easy to conduct. However, practical solutions are something else. Pedagogic methodology which would encourage and foster active and independent learning under our wise and possibly individualized academic guidance(7), was not introduced yet on any significant scale.

ACADEMIC PRIORITIES AND TIME ALLOCATION

The major and decisive obstacle to the implementation of such methods is the question of currently perceived academic priorities and the allocation of professors' time(8). The methods which foster active and independent but guided learning require enormous amount of time and energy on the side of the faculty. This statement is especially valid in regard to the pedagogic activities which require personalized attention to small groups of students and particularly to the individual student. The time expenditures can be illustrated on the organization of one of the author's courses which is allotted in the official time-table 187 student contact hours. A number of supervised activities designed to foster active learning in small groups of students uses over one third of the above hours, and the team of thirteen teachers participates in the course. The total amount of manpower-hours spent on the course comes to the figure of 942 hours. The course

has been called a "Cadillac course" on more than one occasion, and the question has been raised if we can afford such pedagogic Cadillacs. Yet, everybody takes great pride in the fact that the students perform at the peak of their large peer group on this continent at the National Board Examinations, Part I (Basic Sciences). Another course, allotted in the official time-table 72 hours and resulting in the total of about 220 manpower-hours, confirms the pattern of costly expenditure of teachers' time.

The resistance of the faculty is well understandable in the light of the traditional fact that the major expenditure in terms of time and energies spent on the pedagogic activities, especially at the undergraduate level, does not pay off in the major career decisions and related administrative consequences. For such purposes, the research activities including the process of attracting the largest possible amount of extramural funding monies, graduate students or post-doctoral fellows, and publishing as many research papers as possible, pays off much more[9]. There are some exceptions, of course, but every rule has its exceptions.

It is certainly interesting to calculate the time proportions which an average professor allocates to his/her academic priorities. The author came to the conclusion that a faculty member at his institution spends on the average about 25% of his/her time or less on the pedagogic activities at the undergraduate level, including both the scheduled contact hours and all other related educational tasks. This procentage is the best possible estimate since it is, for a great variety of reasons, extremely difficult to come up with mathematically precise average figure involving over 1,000 full-time academic staff members at the fairly sized

and so diversified institutions as is the University of Ottawa. In the author's school, the average procentage of time proportion spent by a professor on undergraduate pedagogic activities can be estimated at about 15% of his/her time, and even this figure is seen by the author as being generous. If we take the above magic figures as being close to the actual reality, it would simply mean that an average professor across the campus spends about three quarters of his/her time on other activities as compared with teaching, in the school of medicine this figure being about 85%.

CONCLUSION

In conclusion, the following alternatives can be presented, ranging from the worst to the best of possible future educational and administrative scenarios, as seen by the author:

1. The faculty and administration of our institutions may choose to actively maintain the status quo;
2. The administration may choose to offer limited incentives to faculty, to introduce methods leading to more active learning on a variably limited scale. Such scenario is probably used at many institutions at present, and it may be possibly designed for the purpose to deflect criticism that the rhetoric about the significance of teaching is to some extent just the lip service;
3. The administration may select to introduce a complex of administrative measures, combined with effective support systems and - as a crucial point - with a complex of attractive incentives and just rewards, designed to gradually overcome the traditional pedagogic inertia of the faculty to implement the best possible, efficient active learning/teaching

methods on a significantly large scale. Only this alternative can be then classified as a genuine attempt to lead our pedagogy into the twenty-first century.

Whatever alternative may be possibly in store for both, students and their teachers, depends almost exclusively in the author's view on the wisdom, foresight and vision of our academic/ administrative leaders, and on a relatively small nucleus of enthusiastic and dedicated educators. The rest of the professoriate will then, given time, follow since it will find this choice, for a change, attractive.

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